

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/017985

A. CLASSIFICATION OF SUBJECT MATTER

H01L31/042 H01L31/05 H01L31/048

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 013, no. 097 (E-723), 7 March 1989 (1989-03-07) & JP 63 271978 A (SHARP CORP), 9 November 1988 (1988-11-09) abstract ----- PATENT ABSTRACTS OF JAPAN vol. 1999, no. 05, 31 May 1999 (1999-05-31) & JP 11 031715/A (MATSUSHITA ELECTRIC IND CO LTD), 2 February 1999 (1999-02-02) abstract ----- -/-	1,4,10
A		1,8,10, 17

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Date of the actual completion of the international search

31 October 2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 16, 8 May 2001 (2001-05-08) & JP 2001 025891 A (MATSUSHITA ELECTRIC IND CO LTD), 30 January 2001 (2001-01-30) abstract -----	1,8,10, 17
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 199 (E-1352), 19 April 1993 (1993-04-19) -& JP 04 343481 A (CANON INC), 30 November 1992 (1992-11-30) abstract; figures 1,3-6 -----	1,2,4,5, 10,12-14
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 13, 30 November 1999 (1999-11-30) & JP 11 214733 A (KYOCERA CORP), 6 August 1999 (1999-08-06) abstract -----	1,10
A	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 04, 4 August 2002 (2002-08-04) & JP 2001 345458 A (KYOCERA CORP), 14 December 2001 (2001-12-14) abstract; figure 1 -----	1,10
A	US 5 478 402 A (HANOKA ET AL) 26 December 1995 (1995-12-26) -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/JP2004/017985

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
JP 63271978 / A	09-11-1988	NONE		
JP 11031715 / A	02-02-1999	JP 3425332 B2		14-07-2003
JP 2001025891 / A	30-01-2001	NONE		
JP 04343481 / A	30-11-1992	JP 2768566 B2		25-06-1998
JP 11214733 / A	06-08-1999	NONE		
JP 2001345458 / A	14-12-2001	NONE		
US 5478402 / A	26-12-1995	AU 1840695 A DE 69532904 D1 DE 69532904 T2 EP 0694213 A1 HK 1014400 A1 WO 9522843 A1		04-09-1995 27-05-2004 02-09-2004 31-01-1996 14-01-2005 24-08-1995